WO-9--02910313-wo.jpg (1700×2338)

ANNEXURE-I

QUALITY TEST REPORT

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Name of Work :Improvements to Drains (Concrete Drain) and Comprehensive development of roads from 12th A Cross to 20th R Cross Bhuvaneshwarinagra near Coffe board park ward no. 06 Byatarayanapura Assembly consituency (near Coffe board park)

Determination of Flakiness Index and Elongation Index of Coarse Aggregate

IS 2386 (Part-1) 1963 (Reaffirmed-2007)

Lab I'd	ISO/IEC17025:2005	Date: 13-01-2020
Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Byatarayanapura, Bengaluru.	
Consultant	Transheight Consultants Private Limited	
Contractor	Executive Engineer, KRDIL,Rajajinagar,Bangalore-560010	
Customer Reference	BBMP/EE/BTP/WO/254/2018-19	
Source of Sample	Sample supplied by Agency	
Sample Condition	Satisfactory	
Date of Reciept	12-01-2020	
Type of Mix	Coarse Aggregate for WMM (Wet Mix Macadam)	
Date of Test	13-01-2020	

Results

Sl. No	Index	Percentage of Flakiness and Elongation Index	Specified limits as per MORTH (specification table 400-12)
1	Flakines Index (%)	30.12	Combined Flakiness and Elongation Index for WMM is Maximum 35%
2	Elongation Index (%)	27.25	
3	Water Absorption (%)	0.85	Max 2%
4	Aggregate Impact Value (%)	13.66	Aggregate Impact Value for WMM is Maximum 35%
5	Dry Desnsity (MDD) gm/cc	2.29	-
6	Moisture in (OMC) %	5.59	

Remarks :

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Name of Work :Improvements to Drains (Concrete Drain) and Comprehensive development of roads from 12th A Cross to 20th R Cross Bhuvaneshwarinagra near Coffe board park ward no. 06 Byatarayanapura Assembly consituency (near Coffe board park)

Test Reults of Gradation for Wet Mix Macadam (WMM)

IS: 2386 Part I

Lab I'd	ISO/IEC17025:2005	Date: 13-01-2020
Client	Bruhat Bengalore Mahanagara Palike , Byatarayanapura, Bengaluru.	
Consultant	Transheight Consultants Private Limited	
Contractor	Executive Engineer, KRDIL,Rajajinagar,Bangalore-560010	
Customer Reference	BBMP/EE/BTP/WO/254/2018-19	
Source of Sample	Sample supplied by Agency	
Sample Condition	Satisfactory	
Date of Reciept	12-01-2020	
Type of Mix	Coarse Aggregate for WMM (Wet Mix Macadam)	
Date of Test	13-01-2020	
Total wt of the sample (gms):	11000	

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 400-13)	Remarks
53	0	0 0	0.00	100	100	Satisfactory
45	440	440.0	4.00	96.0	95-100	Satisfactory
22.4	3740	4180.0	38.00	62.0	60-80	Satisfactory
11.2	2136	6316.2	57.42	42.6	40-60	Satisfactory
4.75	1780	8096.0	73.60	26.4	25-40	Satisfactory
0.36	1133	9229.0	83.90	16.1	15-30	Satisfactory
0.6	836	10065.0	91.50	8.5	8-22	Satisfactory
0.075	869	10934.0	99.40	0.6	0-5	Satisfactory

Remarks: Satisfactory

Transheight Consultants Pvt. Ltd. Bangalore PMC

Client Contractor

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Name of Work :Improvements to Drains (Concrete Drain) and Comprehensive development of roads from 12th A Cross to 20th R Cross Bhuvaneshwarinagra near Coffe board park ward no. 06 Byatarayanapura Assembly consituency (near Coffe board park)

FIELD DENSITY BY SAND REPLACEMENT METHOD

IS 2720 (Part-28)	Date: 17-01-2020

Lab I'd	ISO/IEC17025:2005
Client	Bruhat Bengalore Mahanagara Palike, Byatarayanapura, Bengaluru.
Consultant	Transheight Consultants Private Limited
Contractor	Executive Engineer, KRDIL,Rajajinagar,Bangalore-560010
Customer Reference	BBMP/EE/BTP/WO/254/2018-19
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	17-01-2020

Description of materials:	Subgrade		
Lab.MDD (gm/cc) =	2.290	Lab OMC(%) =	5.59
Bulk Density of sand:	1.385	Sand retained in cone (gm)=W1	848.00

FIELD DENSITY BY SAND REPLACEMENT METHOD

SL.no	Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm	5342.50	5344.50
2	Wt of sand + cylinder before pouring(gm) (w3)	15000.00	15000.00
3	Wt of sand+ cylinder after pouring (gm)(w4)	11031.85	11048.31
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	3120.15	3103.69
5	Volume of sand in hole (V = W5/Ysand)	2252.82	2240.93
6	Bulk density (gm/cc) (Yb= W2/v)	2.37	2.38
7	Moisture meter reading (%)	6.05	6.25
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.24	2.24
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	97.65	98.02
10	Required degree of compaction, (%) .As per MORT&H 5th specification.	97	

Remarks: Satisfactory

Transheight Consultants Bangalore PMC

Client Contractor

#1192,'A'Block,3rdCross, 5th Main, Sahakarnagar Bangalore-560092

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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Name of Work :Improvements to Drains (Concrete Drain) and Comprehensive development of roads from 12th A Cross to 20th R Cross Bhuvaneshwarinagra near Coffe board park ward no. 06 Byatarayanapura Assembly consituency (near Coffe board park)

FIELD DENSITY BY SAND REPLACEMENT METHOD

IS 2720 (Part-28)

Lab Tst	ISO/IEC17025:2005	Date: 18-01-2020	
Client	Bruhat Bengalore Mahanagara Palike, Byatarayanapura, Bengaluru.		
Consultant	Transheight Consultants Private Limited		
Contractor	Executive Engineer, KRDIL,Rajajinagar,Bangalore-560010		
Customer Reference	BBMP/EE/BTP/WO/254/2018-19		
Source of Sample	Sample supplied by Agency		
Sample Condition	Satisfactory		
Type of Mix	Coarse Aggregate for WMM (Wet Mix Macadam)		
Date of Test	18-01-2020		
Description of materials:	Subgrade		
Lab MDD (gm/cc) =	2.290	Lab OMC(%) =	5.59
Bulk Density of sand:	1.385	Sand retained in cone (gm)=W1	848.00

FIELD DENSITY BY SAND REPLACEMENT METHOD

SL.no	Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm	5351.00	5349.00
2	Wt of sand + cylinder before pouring(gm) (w3)	15000.00	15000.00
3	Wt of sand+ cylinder after pouring (gm)(w4)	11032.78	11061.66
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	3119.22	3090.34
5	Volume of sand in hole (V = W5/Ysand)	2252.14	2231.29
6	Bulk density (gm/cc) (Yb= W2/V)	2.38	2.40
7	Moisture meter reading (%)	5.72	6.02
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.25	2.26
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	98.14	98.74
10	Required degree of compaction, (%) ,As per MORT&H 5th specification.	97	

Remarks: Satisfactory

Transheight Consultants Pvt. Ltd. Bangalore

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Name of Work : Improvements to Drains (Concrete Drain) and Comprehensive development of roads from 12th A Cross to 20th R Cross Bhuvaneshwarinagra near Coffe board park ward no. 06 Byatarayanapura Assembly consituency (near Coffe board park)

Test Reults of Bitumen Binder Content and Gradation for Bituminous Concrete (BC)

IS 2386 (Part-1) 1963 (Reaffirmed-2011)	Date: 20-01-2020
Lab I'd	ISO/IEC17025:2005
Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Byatarayanapura,Bengaluru.
Consultant	Transheight Consultants Private Limited
Contractor	Executive Engineer, KRDIL,Rajajinagar,Bangalore-560010
Customer Reference	BBMP/EE/BTP/WO/254/2018-19
Source of Sample	Sample supplied by Agency
Type of Mix	Bituminous Concrete (BC)
Date of Test	20-01-2020

Calculation

	Chainage:		
	Trial 1	Trial 2	Trial 3
Wt of empty Bowl (g)	1031	1031	1032
Wt of empty Bowl + Mix before extraction (g)	1531	1531	1532
Wt of empty Bowl + Mix after extraction (g)	1504	1505	1506
Wt of filter paper before extraction (g)	3.5	3.5	3.5
Wt of filter paper after extraction (g)	5.33	5.67	5.39
Wt of fines (g)	1.83	2.17	1.89
Wt of aggrigate (g)	474.83	476.17	475.89
Wt of bitumin (g)	27	26	26
% binder contents in mix	5.69	5.46	5.46
Avg binder contents in mix (%)	5.54		

Remarks :

Transheight Consultants P. Vt. Ltd. Bangalore PMC

Client Contractor

#1192,'A'Block,3rdCross, 5th Main,
Sahakarnagar,Bangalore-560092

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Test Reults of Bitumen Binder Content and Gradation for Bituminous Concrete (BC)

Date: 20-01-2020

After Extraction (Trial-1)

Total wt of the sample (gms): 474.83

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 500-17) (Grading-II)	Remarks
19	0	0	0.0	100	100	Satisfactory
13.2	15	15	3.2	96.8	90-100	Satisfactory
9.5	98	113	23.8	76.2	70-88	Satisfactory
4.75	111	224	47.2	52.8	53-71	Satisfactory
2.36	50	274	57.7	42.3	42-56	Satisfactory
1.18	38	312	65.7	34.3	34-48	Satisfactory
0.6	40	352	74.1	25.9	26-38	Satisfactory
0.3	33	385	81.1	18.9	18-28	Satisfactory
0.15	24	409	86.1	13.9	12-20	Satisfactory
0.075	42	451	95.0	5.0	4-10	Satisfactory

Remarks: Satisfactory

After Extraction (Trial-2)

Total wt of the sample (gms): 476.17

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 500-23) (Grading-II)	Remarks
19	0	0	0.0	100	100	Satisfactory
13.2	9	9	1.9	98.1	90-100	Satisfactory
9.5	95	104	21.9	78.1	70-88	Satisfactory
4.75	111	215	45.3	54.7	53-71	Satisfactory
2.36	56	271	57.1	42.9	42-56	Satisfactory
1.18	36	307	64.7	35.3	34-48	Satisfactory
0.6	44	351	73.9	26.1	26-38	Satisfactory
0.3	39	390	82.1	17.9	18-28	Satisfactory
0.15	24	414	87.2	12.8	12-20	Satisfactory
0.075	41	455	95.8	4.2	4-10	Satisfactory

Remarks: Satisfactory

After Extraction (Trial-3)

Total wt of the sample (gms): 475.89

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 500-23) (Grading-II)	Remarks
19	0	0	0.0	100	100	Satisfactory
13.2	10	10	2.1	97.9	90-100	Satisfactory
9.5	95	105	22.1	77.9	70-88	Satisfactory
4.75	112	217	45.7	54.3	53-71	Satisfactory
2.36	47	264	55.6	44.4	42-56	Satisfactory
1.18	42	306	64.4	35.6	34-48	Satisfactory
0.6	42	348	73.3	26.7	26-38	Satisfactory
0.3	36	384	80.9	19.1	18-28	Satisfactory
0.15	27	411	86.6	13.4	12-20	Satisfactory
0.075	38	449	94.6	5.4	4-10	Satisfactory

Remarks: Satisfactory

Transheight Bangalore PMC

Client | Contractor

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Name of Work : Improvements to Roads and Drains in Kuvempu Nagara, Singapura, Ramachandrapura and surrounding areas in ward no-11

Test Reults of Bitumen Binder Content and Gradation for Bituminous Concrete (BC)

IS 2386 (Part-1) 1963 (Reaffirmed-2011) — **Date: 20-01-2020**

Lab I'd	ISO/IEC17025:2005
Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Byatarayanapura, Bengaluru.
Consultant	Transheight Consultants Private Limited
Contractor	Executive Engineer, KRDIL,Rajajinagar,Bangalore-560010
Customer Reference	BBMP/EE/BTP/WO/254/2018-19
Source of Sample	Sample supplied by Agency
Type of Mix	Bituminous Concrete (BC)
Date of Test	20-01-2020

Calculation

	Chainage:		
	Trial 1	Trial 2	Trial 3
Wt of empty Bowl (g)	1034	1033	1035
Wt of empty Bowl + Mix before extraction (g)	1534	1533	1535
Wt of empty Bowl + Mix after extraction (g)	1508	1506	1508
Wt of filter paper before extraction (g)	3.5	3.5	3.5
Wt of filter paper after extraction (g)	5.33	5.67	5.39
Wt of fines (g)	1.83	2.17	1.89
Wt of aggrigate (g)	475.83	475.17	474.89
Wt of bitumin (g)	26	27	27
% binder contents in mix	5.46	5.68	5.69
Avg binder contents in mix (%)	5.61		

Remarks :

Transheight Consultants Pvt. Ltd. Bangalore PMC

Client **Contractor**

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Test Reults of Bitumen Binder Content and Gradation for Bituminous Concrete (BC)

Date: 20-01-2020

After Extraction (Trial-1)

Total wt of the sample (gms): 475.83

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 500-17) (Grading-II)	Remarks
19	0	0	0.0	100	100	Satisfactory
13.2	12	12	2.5	97.5	90-100	Satisfactory
9.5	77	89	18.7	81.3	70-88	Satisfactory
4.75	110	199	41.8	58.2	53-71	Satisfactory
2.36	85	284	59.7	40.3	42-56	Satisfactory
1.18	26	310	65.1	34.9	34-48	Satisfactory
0.6	20	330	69.4	30.6	26-38	Satisfactory
0.3	42	372	78.2	21.8	18-28	Satisfactory
0.15	44	416	87.4	12.6	12-20	Satisfactory
0.075	40	456	95.8	4.2	4-10	Satisfactory

Remarks: Satisfactory

After Extraction (Trial-2)

Total wt of the sample (gms): 475.17

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 500-23) (Grading-II)	Remarks
19	0	0	0.0	100	100	Satisfactory
13.2	15	15	3.2	96.8	90-100	Satisfactory
9.5	78	93	19.5	80.5	70-88	Satisfactory
4.75	101	194	40.8	59.2	53-71	Satisfactory
2.36	82	276	58.0	42.0	42-56	Satisfactory
1.18	32	308	64.7	35.3	34-48	Satisfactory
0.6	13	321	67.5	32.5	26-38	Satisfactory
0.3	48	369	77.5	22.5	18-28	Satisfactory
0.15	46	415	87.2	12.8	12-20	Satisfactory
0.075	41	456	95.8	4.2	4-10	Satisfactory

Remarks: Satisfactory

After Extraction (Trial-3)

Total wt of the sample (gms): 474.89

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 500-23) (Grading-II)	Remarks
19	0	0	0.0	100	100	Satisfactory
13.2	12	12	2.5	97.5	90-100	Satisfactory
9.5	72	84	17.7	82.3	70-88	Satisfactory
4.75	113	197	41.4	58.6	53-71	Satisfactory
2.36	72	269	56.5	43.5	42-56	Satisfactory
1.18	35	304	63.9	36.1	34-48	Satisfactory
0.6	26	330	69.4	30.6	26-38	Satisfactory
0.3	44	374	78.6	21.4	18-28	Satisfactory
0.15	41	415	87.2	12.8	12-20	Satisfactory
0.075	40	455	95.6	4.4	4-10	Satisfactory

Remarks: Satisfactory

DPMC | Client | Contractor

Trans Height Consultancy Pvt. Ltd. Bangalore

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